WHAT IS CLAIMED IS:

1. A storage controller for controlling, in accordance with a read/write command from a host, reading of data from a recording medium or writing of data to the recording medium, and transfer of read data or write data to or from the host, comprising:

an error correction code generator which generates an error correction code in accordance with data to be written to the recording medium, the error correction code being attached to the data;

an erasure pointer memory which stores pointer information indicative of a location at which an error exists, the error being contained in data read from the recording medium;

an error correction circuit which corrects the error in the data, read from the recording medium, by erasure correction and random correction, using the error correction code attached to the data and the pointer information stored in the erasure pointer memory;

an inhibition circuit which inhibits the error correction code generator from attaching the error correction code to data to be written to the recording medium, when a special write command from the host is executed; and

a programmable erasure pointer generator which sets, in the erasure pointer memory, special pointer

information indicating a location as an error location, in accordance with an erasure pointer setting command from the host, the location being designated by the erasure pointer setting command, the special pointer information set in the erasure pointer memory being used by the error correction circuit to correct an error in data written to the recording medium by executing the special write command, and read therefrom in accordance with a normal read command from the host.

2. The storage controller according to claim 1, further comprising means for inhibiting the special pointer information, set in the erasure pointer memory in accordance with the erasure pointer setting command, from being rewritten when a later read command is executed.

3. The storage controller according to claim 1, wherein the inhibition circuit includes a switch which performs switching between a state in which the data, to be written to the recording medium, is input to the error correction code generator, and a state in which the data, to be written to the recording medium, bypasses the error correction code generator, the switch being switched to make the data, to be written to the recording medium, bypass the error correction code generator when the special write command is executed.

4. The storage controller according to claim 1, further comprising:

a read data buffer which stores, in units of data sectors, the data read from the recording medium and having the error corrected by the error correction circuit;

a write data buffer which stores, in units of data sectors, the data to be written to the recording medium; and

a transfer circuit which transfers, to the read data buffer, the data read from the recording medium and having the error correction code attached thereto, without passing the data through the error correction circuit, when a special read command from the host is executed.

5. The storage controller according to claim 4, wherein the transfer circuit includes a switch which performs switching between a state in which the data, to be written to the recording medium, is input to the error correction code generator, and a state in which the data, to be written to the recording medium, bypasses the error correction code generator, the switch being switched to make the data, to be written to the recording medium, bypass the error correction code generator when the special write command is executed.

6. The storage controller according to claim 1,

wherein:

the inhibition circuit inhibits the error correction code generator from attaching the error correction code to first data when the special write command from the host dictates writing of the first data to the recording medium, the first data being used for verifying an erasure correction function, the first data being obtained by rewriting part of second data, the error correction code attached to the first data being based on the second data;

the programmable erasure pointer generator sets the special pointer information in the erasure pointer memory when the erasure pointer setting command from the host dictates setting of the special pointer information, the special pointer information indicating, as the location of the error, a location corresponding to the rewritten part of the first data; and

the error correction circuit corrects an error in the first data read from the recording medium, by erasure correction and random correction, using the error correction code attached to the first data and the special pointer information set in the erasure pointer memory, when a normal read command from the host dictates reading of the first data from the recording medium.

7.   The storage controller according to claim 6,

further comprising:

a read data buffer which stores, in units of data sectors, the data read from the recording medium and having the error corrected by the error correction

5   circuit;

a write data buffer which stores, in units of data sectors, the data to be written to the recording medium;

a transfer circuit which transfers, to the read

10   data buffer, the data read from the recording medium and having the error correction code attached thereto, without passing the data through the error correction circuit, when a special read command from the host is executed;

15   means for copying, to the write data buffer, the second data stored in the read data buffer and having the error correction code attached thereto, when the second data is read from the recording medium by executing the special read command from the host, and

20   is stored into the read data buffer without being passed through the error correction circuit; and

means for generating the first data, to be written to the recording medium, by rewriting part of the second data copied to the write data buffer.

25   8. The storage controller according to claim 6, further comprising:

a read data buffer which stores, in units of data

sectors, the data read from the recording medium and having the error corrected by the error correction circuit;

a write data buffer which stores, in units of data sectors, the data to be written to the recording medium;

a transfer circuit which transfers, to the read data buffer, the data read from the recording medium and having the error correction code attached thereto, without passing the data through the error correction circuit, when a special read command from the host is executed;

means for rewriting part of the second data stored in the read data buffer, when the second data is read from the recording medium by executing the special read command from the host, and is stored into the read data buffer without being passed through the error correction circuit; and

means for generating the first data, to be written to the recording medium, by copying the rewritten second data from the read data buffer to the write data buffer, the second data having the error correction code attached thereto.

9. A storage apparatus for generating an error correction code for data when the data is written to a recording medium, and correcting an error in the data when the data is read from the recording medium,

the error being corrected using pointer information indicative of a location of the error and the error correction code attached to the data, the storage apparatus comprising:

5   a signal processing device which subjects a read signal, read from the recording medium, to analog-to-digital conversion, encodes data to be written to the recording medium, and decodes digitized read data; and

     a storage controller which controls, in

10 accordance with a read/write command from a host, reading of data from a recording medium or writing of data to the recording medium via the signal processing device, and transfer of read data or write data to or from the host, and

15   wherein the storage controller includes:

     an error correction code generator which generates an error correction code in accordance with data to be written to the recording medium, the error correction code being attached to the data;

20   an erasure pointer memory which stores pointer information indicative of a location at which an error exists, the error being contained in data read from the recording medium;

     an error correction circuit which corrects the

25 error in the data, read from the recording medium, by erasure correction and random correction, using the error correction code attached to the data and

the pointer information stored in the erasure pointer memory;

an inhibition circuit which inhibits the error correction code generator from attaching the error correction code to data to be written to the recording medium, when a special write command from the host is executed; and

a programmable erasure pointer generator which sets, in the erasure pointer memory, special pointer information indicating a location as an error location, in accordance with an erasure pointer setting command from the host, the location being designated by the erasure pointer setting command, the special pointer information being used to read data, written to the recording medium by executing the special write command, in accordance with a normal read command from the host.

10. A method of verifying an erasure correction function incorporated in a storage apparatus, the erasure correction function being used to correct an error in data read from a recording medium, using pointer information indicative of a location of the error and an error correction code attached to the data, the method comprising:

preparing, in a write data buffer, first data to be written to the recording medium, the first data being obtained by rewriting part of second data,

the first data having an error correction code
generated based on the second data;

executing a special write command to write, to
the recording medium, the first data prepared in the
5 write data buffer and already having the error
correction code, without generating another error
correction code based on the first data;

setting special pointer information in an erasure
pointer memory regardless of reading of data from the
10 recording medium, the special pointer information
indicating, as an error location, a location
corresponding to the rewritten part of the first data;

reading the first data written to the recording
medium by execution of the special write command; and

15 determining whether the erasure correction
function is normally operating, from a determination
as to whether an error in the first data read from the
recording medium is corrected by erasure correction
and random correction using the error correction code
20 attached to the first data and pointer information
stored in the erasure pointer memory.

11. The method according to claim 10, further
comprising inhibiting the special pointer information
stored in the erasure pointer memory from being
25 rewritten, and wherein the first data is read after
the inhibiting.

12. The method according to claim 10, wherein

the preparing the first data includes:

preparing the second data in the write data
buffer with the error correction code attached, the
error correction code being generated on a basis of
5   the second data; and

generating the first data by rewriting part of
the second data prepared in the write data buffer.

13. The method according to claim 12, wherein the
preparing the second data includes:

10   preparing the second data in the write data
buffer with no error correction code attached;

executing a normal write command to write, to the
recording medium, the second data with no error
correction code prepared in the write data buffer;

15   executing a special read command to read, from
the recording medium, the second data written to the
recording medium by execution of the normal write
command, and to store the second data into a read data
buffer with the error correction code attached, the
20   second data being written to the recording medium with
the error correction code attached, the error
correction code being generated on a basis of the
second data; and

copying the second data, stored into the read
25   data buffer by the execution of the special read
command, to the write data buffer with the error
correction code attached.

14. The method according to claim 10, wherein a length of the part is not more than a sum of a data length which can be corrected by the erasure correction, and a data length which can be corrected by the random correction.

15. The method according to claim 14, wherein the special pointer information indicates, as an error location, a continuous data range included in the part and except for a burst length which can be corrected by random correction.